LIQUID EFFLUENT

Results for 2003

QUICK FACTS

- 9 effluent discharge points
- 5 INEEL site areas
- Regulations: State of Idaho Wastewater, Land Application Permit (WLAP), City of Idaho Falls Industrial Wastewater Form (IWAF), and DOE environmental protection objectives

This program monitors discharges of liquid waste effluents from DOE facilities and operations at the INEEL Site and Idaho Falls facilities. The program covers both radioactive and nonradioactive parameters in effluent and addresses permit requirements in State of Idaho Wastewater Land Application Permits (WLAPs), City of Idaho Falls Industrial Wastewater Acceptance Form (IWAF), and DOE environmental protection objectives. Land application methods at the INEEL include sprinkler systems, infiltration trenches, and percolation ponds.

In addition to monitoring per the WLAP and IWAF, the Liquid Effluent Program samples for additional parameters, and at other locations, in addition to those required by the permits. These sampling locations were chosen using a risk-based approach and differentiate between streams requiring "characterization" monitoring and those requiring "surveillance" monitoring. The objectives of characterization monitoring are to provide data from which risk can be quantified and to establish baseline conditions for measuring change. Streams requiring characterization monitoring did not have sufficient historical data to quantify risk. Locations requiring surveillance monitoring were determined from historical data to have a potential risk of exceeding a limit or a potential impact to the environment.

FOR MORE INFORMATION

Visit our Web site at:
http://cleanup.inel.gov/monitoring/

Read the 2003 Annual Site Environmental Report that is available in DOE Public Reading Rooms or at our Web site.

Contact: Roger Wilhelmsen
208-526-9401
rmw@inel.gov

During 2003, nine effluent discharge points were routinely monitored for nonradiological parameters and five for radiological parameters at the following five INEEL Site areas: Central Facilities Area, Idaho Falls Facilities, Idaho Nuclear Technology and Engineering Center, Test Area North, and Test Reactor Area. Information regarding permit limits and location-specific parameters can be found in the *2003 Annual Site Environmental Report* or the *2003 Wastewater Land Application Site Performance Reports for the INEEL* on our Web site.

RESULTS SUMMARY

Central Facilities Area (CFA) Sewage Treatment Plant

- Sewage Treatment Plant Lift Station (CFA-LS1):
  - Liquid Effluent Description: Untreated wastewater from all sanitary sewer drains throughout CFA
  - Type of Monitoring: Wastewater Land Application Permit
  - 2003 Results: Concentrations of all parameters were within historical ranges.
- Sewage Treatment Plant Effluent Pump Pit (CFA-STF):
  - Liquid Effluent Description: Treated wastewater from the CFA Sewage Treatment Plant lagoons prior to land application
  - Types of Monitoring: Wastewater Land Application Permit and characterization
  - 2003 Results: Concentrations of all parameters were within historical ranges.
- Transportation Complex Oil and Water Separator (CFA-696):
  - Liquid Effluent Description: Water from floor drains and vehicle maintenance areas in the Transportation Complex
  - Type of Monitoring: Surveillance
  - 2003 Results: Concentrations of all parameters were within historical ranges.

Idaho Falls Facilities

- INEEL Research Center East Access Port (IFF-603B):
  - Liquid Effluent Description: Sewage and laboratory discharges from INEEL Research Center and the Research Office Building
  - Type of Monitoring: Industrial Wastewater Acceptance Form (IWAF)
  - 2003 Results: Concentrations of all parameters were within IWAF limits.

Idaho Nuclear Technology and Engineering Center (INTEC) Sewage Treatment Plant

- Influent to Sewage Treatment Plant (CPP-769):
  - Liquid Effluent Description: Untreated wastewater from sanitary sewer drains throughout INTEC
  - Type of Monitoring: Wastewater Land Application Permit and characterization
  - 2003 Results: Concentrations of all parameters, except for the June 2003 biochemical oxygen demand (BOD), were within historical ranges. The June 2003 BOD was the highest to date. However, the permit does not set a concentration limit for BOD.
- Sewage Treatment Plant Effluent to Rapid Infiltration Trenches (CPP-773):
  - Liquid Effluent Description: Treated wastewater from the INTEC lagoons prior to the infiltration trenches
  - Type of Monitoring: Wastewater Land Application Permit and characterization
  - 2003 Results: Wastewater Land Application Permit total nitrogen limit was exceeded in March and November. Major plant modifications will be undertaken to reroute the treated sanitary wastewater from the Sewage Treatment Plant to the INTEC New Percolation Ponds and to close the infiltration trenches associated with the Sewage Treatment Plant to reduce the nitrogen to acceptable concentrations.

Idaho Nuclear Technology and Engineering Center (INTEC) New Percolation Ponds

- Effluent to Percolation Ponds (CPP-797):
  - Liquid Effluent Description: Process-related wastewater, including noncontact cooling water and other nonhazardous liquids; referred to as "service waste"
  - Type of Monitoring: Wastewater Land Application Permit
  - 2003 Results: Effluent concentrations for total dissolved solids (TDS), chloride, and sodium remained high during 2003. Concentrations of all other parameters were within historical ranges. High concentrations of TDS, chloride, and sodium in the service waste effluent are usually indicative of a problem with the water treatment system. Several design options to upgrade the water treatment system are currently being evaluated.

Test Area North (TAN)

- Effluent to Sewage Treatment Plant Pond (TAN-655):
  - Liquid Effluent Description: Combination of process water from TAN-607 and treated sewage
  - Type of Monitoring: Wastewater Land Application Permit and surveillance
  - 2003 Results: Concentrations of all permit-required parameters were within historical ranges, except for the December BOD concentration, which represented the historical high. However, the permit does not set a concentration limit for BOD. Both total nitrogen and total suspended solids were below the concentration limits specified in the permit.

Test Reactor Area (TRA)

- Effluent to Cold Waste Pond (TRA-764)
  - Liquid Effluent Description: Nonradioactive, nonsanitary drains throughout TRA
  - Type of Monitoring: State of Idaho requirements for rapid infiltration systems and surveillance
  - 2003 Results: All required parameters for the effluent (TRA-764) were within historical ranges. Both total nitrogen and TSS were below the limits set for rapid infiltration systems in the State of Idaho *Wastewater Land Application Permit Rules*.